

Reteaching—Chapter 1

Lesson 1.1

1. 30, 38
2. 45, 53
3. 8, 3
4. 8, 2
5. 48, 56
6. 85, 82
7. 65, 81
8. 36, 49
9. -48, -60
10. -28, -33
11. 49, 71
12. -21, -32
13. 12, 18, 27
14. 8, 11, 15, 20, 26

Lesson 1.2

1.

x	1	2	3	4	5
y	8	16	24	32	40

2.

x	1	2	3	4	5
y	11	17	23	29	35

3.

x	1	2	3	4	5
y	25	24	23	22	21

4.

x	1	2	3	4	5
y	120	60	40	30	24

5.

x	1	2	3	4	5
y	6	11	16	21	26

6.

x	1	2	3	4	5
y	-4	-9	-14	-19	-24

7. $x = 4$

8. $x = 9$

9. $x = 7$

10. $x = 12$

11. $x = 15$

12. $x = 18$

13. $4x = 18$; \$4.5

14. $5 + 3x = 17$; 4 hours

LESSON 1.1

1. 14

2. 4

3. 21

4. 4

5. 12

6. 12

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7. 41

8. 20

9. 13

10. 17

11. 26

12. 9

13. 26

14. 0

15. 10

16. 3

17. 19

18. 0

19. 2

20. 27

21. 23

22. 18

23. 20

24. 67

25. 96

26. 131

27. 49

28. 34

29. 16

30. 39

Lesson 1.4

1. $P(1, 4)$

2. $Q(-3, 3)$

3. $R(4, 0)$

4. $S(0, -4)$

5. $T(5, -4)$

6. $U(-4, -3)$

7. $V(-2, 0)$

8. $W(0, 3)$

9. yes

10. No; the line containing two of the points does not contain the third point.

11. yes

12. yes

13. Let d represent the number of pizza that Mark can buy and let t represent the total cost of the pizzas bought. $t = 5d$

14. Yes; if you substitute several different values for d and plot them on a grid, they will lie along a straight line.

Lesson 1.5

1. 2; $y = 2x$

2. -4; $y = 25 - 4x$

3. -3; $y = -1 - 3x$

4. 5; $y = -25 + 5x$

5.

1	2	3	4	5
-1	-2	-3	-4	-5

6.

1	2	3	4	5
3	1	-1	-3	-5

7.

1	2	3	4	5
15	20	25	30	35

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Lesson 1.6

1. positive
2. negative
3. none
4. The line should be close to all the points; check students' work.
5. The line should be close to all the points; check students' work.
6. Line b

Reteaching—Chapter 2

Lesson 2.1

1. $2.45 > -2.45$
2. $\frac{4}{5} < 1\frac{4}{5}$
3. $2.6 = 2\frac{3}{5}$
4. $-2 = -\frac{4}{2}$
5. $-11 > -12$
6. $2\frac{2}{7} > -\frac{16}{7}$
7. $0 < 4.5$
8. $0 > -4.5$
9. $-2.33; 2.33$
10. $-\frac{1}{17}; \frac{1}{17}$
11. $\frac{9}{2}; \frac{9}{2}$
12. $2\frac{6}{13}; 2\frac{6}{13}$
13. $-12.56; 12.56$
14. $12.56; 12.56$
15. $-1200; 1200$
16. $0.13; 0.13$
17. $1356; 1356$

18. $-3\frac{99}{100}; 3\frac{99}{100}$

19. $22.7; 22.7$

20. $-100\frac{1}{2}; 100\frac{1}{2}$

21. 2.8

22. -11

23. 30

24. -4

25. 0

26. 6.25

27. 5

28. 25

29. 4

Lesson 2.2

1. 3
2. -8
3. 1
4. -6
5. -7
6. -1
7. -19
8. -10
9. -42
10. -25
11. -11
12. 6
13. -22

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14. -9.5

15. 3.1

16. 8.6

17. $\frac{1}{3}$

18. $-\frac{4}{5}$

19. $-\frac{5}{8}$

Lesson 2.3

1. 10

2. -6

3. -10

4. 3

5. -2

6. -24

7. 43

8. 40

9. 48

10. -2

11. -90

12. -6.1

13. -2.8

14. -1.4

15. 1.7

16. 12.5

17. -15.8

18. 10

19. 5

20. 15

21. 20

22. 55

23. 12

24. 1.7

25. 2.7

26. $2\frac{3}{4}$

Lesson 2.4

1. 14

2. -88

3. -84

4. 39

5. 300

6. -750

7. -60

8. 0

9. 11

10. 3

11. -0.38

12. -14.4

13. 3

14. -5

15. -4

16. 12

17. 125

18. -3

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19. 32

20. 0

21. 0.15

22. 27

23. -2

24. $-\frac{8}{9}$

Lesson 2.5

1. Associative Property of Addition

2. Distributive Property

3. Commutative Property of Addition

4. Associative Property of Multiplication

5. Commutative Property of Addition

6. 12

7. 10

8. 9

9. 1.9

10. 1.8

11. 5

12. 15

13. 4.3

14. 148

15. 480

16. 1300

17. 0

18. 56

19. 86

20. 170

21. 120

22. 170

23. 130

Lesson 2.6

1. $4x + 9$

2. $7m - 2$

3. $22 - 3y$

4. $5b - 4a$

5. $-6x - 22$

6. $7n + 6m + 5$

7. $3x + 8$

8. $2m - 2$

9. $-4p + 12q - 14r$

10. $26x - 6y$

11. $-5p$

12. $-y - 17$

13. $-3x - 4$

14. $-4m - 4n$

15. $9x - 19y$

16. $-12a + 17b$

17. $-3p + 2n + t$

18. $6x + y + 4$

19. $10a - 10b - 10$

20. $5m + 5n - 12$

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LESSON 2.7

1. $-22x^2$
2. $14x^2$
3. $-2x^2 - 2x$
4. $-18x^2 + 12x$
5. $x^2 + 4x$
6. $3x^2 - 24x$
7. $10x^2 + 50x$
8. $7x^2 - 35x$
9. $-2x^2 - 2x$
10. $x^2 - 8x$
11. $-7a$
12. $-45n$
13. $-3x - 2$
14. $-2k + 3$
15. $-14x + 6y$
16. $5x + 30y$
17. $x + 2y$
18. $9x - 24$
19. $3 + 6x$
20. $3x - 9y$
21. $8.5y + 3.6$
22. $-20a - 30$

Reteaching—Chapter 3

Lesson 3.1

1. $t = 56$
2. $x = -44$
3. $y = 6.1$
4. $m = -40$
5. $r = -16$
6. $x = -5$
7. $z = \frac{2}{5}$
8. $a = -3$
9. $b = -11.5$
10. $x = \frac{1}{10}$
11. $x + 2790 = 5000$; \$2210
12. $35 + 90 + c = 180$; $m\angle C = 55$
13. $x = 18$
14. $t = -26$
15. $y = 25$
16. $m = 20.4$
17. $b = -9.5$
18. $x = 640$
19. $y = 8\frac{1}{2}$
20. $a = -5$
21. $x = 1.6$
22. $y = 7$
23. $b = 180$
24. $c = -10.7$
25. $x - 60 = 215$, \$275

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11. $x = 4$

12. $x = \frac{1}{8}$

13. $n = -\frac{7}{15}$

14. $m = 6$

15. $x = -16$

16. $y = 36$

17. She must score 93.

Lesson 3.5

1. $x = -6$

2. $t = 5$

3. $z = 3$

4. $k = -13.5$

5. $x = 4$

6. $m = 2$

7. $h = 3$

8. $n = -3$

9. $t = 3$

10. $c = -5$

11. $f = -1$

12. $y = 7$

13. $3(x - 1.50) = 35.97$; the original cost is \$13.49.

14. $12x = 2(x + 6)$; $x = 1.2$

15. $4(x - 2) = 20$; the original average cost was \$7.

16. $29 + 0.15x = 20 + 0.25x$; the rates are equal when you drive 90 miles in one day.

Lesson 3.6

1. $x = y + 10$

2. $y = z - x$

3. $z = x + y$

4. $x = 2y - a$

5. $y = 32 - x + z$

6. $t = \frac{d}{r}$

7. $h = \frac{2A}{b}$

8. $x = \frac{5}{3}y + 5$

9. $y = 2x - 3$

10. $l = \frac{P}{2} - w$

11. $w = 3$

12. $r = 7$

13. 10 meters

14. 4 hours

15. \$7000

16. 16 kPa

Reteaching—Chapter 4

Lesson 4.1

1. $\frac{2}{5}$

2. $\frac{5}{1}$

3. $\frac{9}{8}$

4. $\frac{3}{2}$

5. $\frac{6}{17}$

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6. $\frac{2}{15}$

7. $\frac{4}{5}$

8. $\frac{2}{5}$

9. $\frac{18}{1}$

10. $\frac{1}{5}$

11. $\frac{2}{61}$

12. $\frac{3}{500}$

13. no; cross products: 28 and 35

14. yes; cross products: 72 and 72

15. yes; cross products: 120 and 120

16. no; cross products: 400 and 500

17. no; cross products: 336 and 352

18. no; cross products: 540 and 450

19. yes; cross products: 528 and 528

20. yes; cross products: 540 and 540

21. yes; cross products: 2700 and 2700

22. $b = 6.3$

23. $a = 1$

24. $p = 50$

25. $r = 24$

26. $k = 60$

27. $t = 2.1$

28. $d = 12$

29. $m = 15$

30. $s = 9$

31. $e = 10$

32. $n = 3$

33. $z = 270$

34. 18 free throws

Lesson 4.2

1. 0.86

2. 0.783

3. 0.06

4. 0.46

5. 0.23

6. 0.9

7. 1.25

8. 0.004

9. $\frac{4}{5}$

10. $\frac{1}{8}$

11. $\frac{9}{500}$

12. $\frac{1}{100}$

13. $\frac{12}{25}$

14. $\frac{2}{5}$

15. $1\frac{4}{5}$

16. $\frac{3}{8}$

17. $\frac{7}{20}$

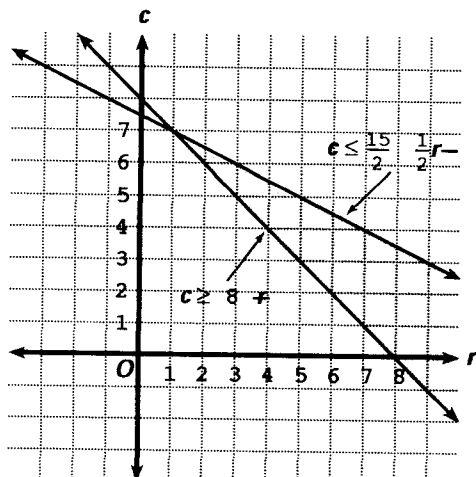
18. $\frac{1}{3}$ off

19. 32

20. 40

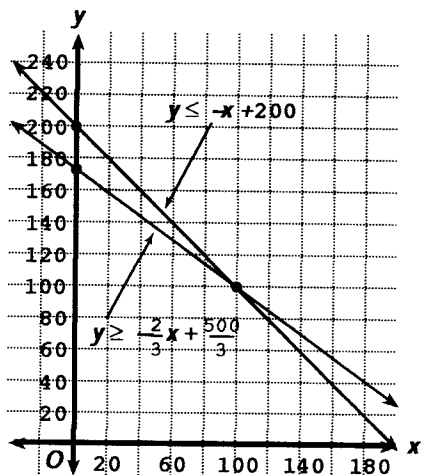
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3.



Answers may vary. Sample answer:
(5, 5) and (8, 2)

4.



Answers may vary. Sample answer:
(180, 20) and (100, 100)

Lesson 7.6

1. $\begin{cases} x = y + 1 \\ x + y = 27 \end{cases}$

Joel is 13 years old; Roberto is 14 years old

2. $\begin{cases} x = 3y \\ x + 6 = 2(y + 6) \end{cases}$

Latisha is 18 years old now.

3. $\begin{cases} p + n = 260 \\ p + 5n = 432 \end{cases}$

43 nickels and 217 pennies

4. $\begin{cases} n + q = 57 \\ 5n + 25q = 725 \end{cases}$

22 quarters and 35 nickels

5. $\begin{cases} x + y = 42 \\ 32x + 40y = 1440 \end{cases}$

thirty 32-cent stamps and twelve 40-cent stamps

6. $\begin{cases} t + u = 12 \\ u = 3t \end{cases}$

39

7. $\begin{cases} t + u = 10 \\ 2(10t + u) - 1 = 10u + t \end{cases}$

37

Reteaching—Chapter 8

Lesson 8.1

1. 625

2. 81

3. 1,000,000

4. 128

5. 32,768

6. 729

7. 6

8. 10,000

9. 144

10. 1

11. $3^9 = 19,683$

12. $2^7 = 128$

13. $10^8 = 100,000,000$

14. $5^7 = 78,125$

15. $8^{10} = 1,073,741,824$

16. $4^6 = 4096$

17. $15a^5$

18. $-21c^3d^2$

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19. $5s^3t^5$

20. $24p^7q^3$

21. $4m^5n^4$

22. $6a^6b^5c^2$

Lesson 8.2

1. 4096

2. 729

3. y^{12}

4. m^{10}

5. $4s^6$

6. $5r^{10}$

7. $27c^{18}$

8. n^{3d}

9. 1,000,000

10. $32y^{15}$

11. $216x^{12}$

12. $512q^9$

13. c^8d^8

14. $81m^2n^{10}$

15. $4e^{12}f^3$

16. $16p^{20}r^{12}$

17. $9y^6$

18. $-g^5h^{20}$

19. $-a^4b^9$

20. $-432c^{11}d^{18}$

Lesson 8.3

1. 343

2. 32

3. $4d^6$

4. $\frac{m^2}{2}$

5. 1,000,000,000

6. $-9r^4$

7. $6c^7$

8. $-9g^7$

9. xy^2

10. p^4qr^2

11. $-6g^6h^2$

12. $\frac{3y^2z^4}{4}$

13. $3s^4t^3$

14. $4.2b^3c^5$

15. $\frac{16r^{12}}{n^4}$

16. $-343c^6m^3$

17. $-125c^3$

18. $d^{10}e^{12}$

Lesson 8.4

1. 1

2. $\frac{1}{25}$

3. 1

4. $\frac{1}{4}$

5. $\frac{1}{27}$

6. 1

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7. $\frac{1}{125}$

8. $\frac{1}{64}$

9. a^{-2}

10. c^{-5}

11. y^{-2}

12. m^{-9}

13. p^8

14. q^{-5}

15. x^{-11}

16. z^3

17. t^5

18. 3125

19. x^{-5}

20. $3^{-1} = \frac{1}{3}$

21. t^{-3}

22. 1,048,576

23. 25

24. a^{-3}

25. r^3

26. $\frac{1}{1024}$

Lesson 8.5

1. 4.57×10^9

2. 2.3×10^{-6}

3. 4.58×10^{-3}

4. 6.2×10^7

5. 7.05×10^{10}

6. 8.75×10^{-5}

7. 5.8×10^3

8. 2.6×10^{-2}

9. 3.5×10^7

10. 7.2×10^{-8}

11. 2.07×10^{12}

12. 3.05×10^{-3}

13. 2.4×10^8

14. 5×10^2

15. 2.236×10^7

16. 4×10^4

17. 2.3646 E 08

18. 3 E 02

19. 2.686 E 12

20. 2 E 02

Lesson 8.6

1. about 793,958 people

2. about 900,526 people

3. about 1,246,182 people

4. about 428,765 people

5. about 12,628,582 people

Reteaching

1.3 The Algebraic Order of Operations

$$1. 16 - 8 \div 4 = 14$$
$$\quad \quad \quad \underline{\quad}$$
$$16 - 2 =$$

$$2. 8 - 20 \div 5 = 4$$
$$\quad \quad \quad \underline{\quad}$$
$$8 - 4 =$$

$$3. 6 + 5 \cdot 3 = 21$$
$$\quad \quad \quad \underline{\quad}$$
$$6 + 15 =$$

$$4. 7 - 15 \div 5 = 4$$
$$\quad \quad \quad \underline{\quad}$$
$$7 - 3 =$$

$$5. 7 + 45 \div 9 = 12$$
$$\quad \quad \quad \underline{\quad}$$
$$7 + 5 =$$

$$6. 10 + 14 \div 7 = 12$$
$$\quad \quad \quad \underline{\quad}$$
$$10 + 2 =$$

$$7. 5 \cdot 9 - 4 = 41$$
$$\quad \quad \quad \underline{\quad}$$
$$45 - 4 =$$

$$8. 6 \cdot 3 + 2 = 20$$
$$\quad \quad \quad \underline{\quad}$$
$$18 + 2 =$$

$$9. 3 + 5 \cdot 2 = 13$$
$$\quad \quad \quad \underline{\quad}$$
$$3 + 10 =$$

$$10. 5 + 3 \cdot 4 = 17$$
$$\quad \quad \quad \underline{\quad}$$
$$5 + 12 =$$

$$11. 3 \cdot 6 + 4 \cdot 2 = 26$$
$$\quad \quad \quad \underline{\quad} \quad \underline{\quad}$$
$$18 + 8 =$$

$$12. 36 \div 6 + 3 = 9$$
$$\quad \quad \quad \underline{\quad}$$
$$6 + 3 =$$

$$13. 8 + 12 \div 4 \cdot 6$$
$$\quad \quad \quad \underline{\quad} \quad \underline{\quad}$$
$$8 + 3 \cdot 6$$
$$8 + 18 = 26$$

$$14. 3 - 1 - 8 \div 4 = 0$$
$$\quad \quad \quad \underline{\quad}$$
$$3 - 1 - 2$$

$$15. \begin{array}{l} 4 \cdot 2 + 10 \div 5 \\ \hline 8 + 2 = 10 \end{array}$$

$$16. \begin{array}{l} 3 \div 3 + 3 - 3 \div 3 \\ \hline 1 + 3 - 1 = 3 \end{array}$$

$$17. \begin{array}{l} 8 \cdot 2 + 4 - 1 = 19 \\ \hline 16 + 4 - 1 = \end{array}$$

$$18. \begin{array}{l} 100 - 10 \cdot 5 \cdot 2 \\ \hline 50 \\ 100 - 100 = 0 \end{array}$$

$$19. \begin{array}{l} 10 \div (3 + 2) = 2 \\ \hline 10 \div 5 \end{array}$$

$$20. \begin{array}{l} 7 + (6 + 4) \cdot 2 \\ \hline 10 \\ 7 + 20 = 27 \end{array}$$

$$21. \begin{array}{l} 5 + (6 + 3) \cdot 2 \\ 5 + 9 \cdot 2 \\ 5 + 18 = 23 \end{array}$$

$$22. \begin{array}{l} 5 \cdot (2 + 3) - 7 \\ 5 \cdot 5 - 7 \\ 25 - 7 = 18 \end{array}$$

$$23. \begin{array}{l} 63 \div 9 + (18 - 5) \\ 63 \div 9 + 13 \\ 7 + 13 = 20 \end{array}$$

$$24. \begin{array}{l} 7 \cdot (6 + 5) - 10 \\ 7 \cdot 11 - 10 \end{array}$$

$$77 - 10 = 67$$

$$25. \begin{array}{l} 2^4 \cdot (4 + 2) \\ 2^4 \cdot 6 \\ 16 \cdot 6 = 96 \end{array}$$

$$26. \begin{array}{l} 5^3 + 6 \\ 125 + 6 = 131 \end{array}$$

$$27. \begin{array}{l} 4^3 - 30 \div 2 \\ 64 - 30 \div 2 \\ 64 - 15 \end{array}$$

$$49$$

$$28. \begin{array}{l} 14 + (3^3 - 7) \\ 14 + (27 - 7) \\ 14 + 20 = 34 \end{array}$$

$$29. \begin{array}{l} 4 \cdot 2^2 \\ 4 \cdot 4 = 16 \end{array}$$

$$30. \begin{array}{l} (3^2 + 4) \cdot 3 \\ (9 + 4) \cdot 3 \\ 13 \cdot 3 = 39 \end{array}$$

Reteaching

2.1 The Real Numbers and Absolute Value

$$1. 2.45 > -2.45$$

$$2. \frac{4}{5} < \frac{9}{5}$$

$$3. 2.\overline{6} = 2.\overline{6}$$

$$4. -2 = -2$$

$$5. -11 > -12$$

$$6. \frac{16}{7} > -\frac{16}{7}$$

$$7. 0 < 4.5$$

$$8. 0 > -4.5$$

$$9. 2.\overline{33}, -2.\overline{33}, 2.\overline{33}$$

$$10. \frac{1}{7}, -\frac{1}{7}, \frac{1}{7}$$

$$11. -\frac{9}{2}, \frac{9}{2}, \frac{9}{2}$$

$$12. -2\frac{6}{13}, 2\frac{6}{13}, 2\frac{6}{13}$$

$$13. 12.5\overline{6}, -12.5\overline{6}, 12.5\overline{6}$$

$$14. -12.5\overline{6}, 12.5\overline{6}, 12.5\overline{6}$$

$$15. 1200, -1200, 1200$$

$$16. -.13, .13, .13$$

$$17. -1356, -1356, 1356$$

$$18. 3^{\frac{99}{100}}, -3^{\frac{99}{100}}, 3^{\frac{99}{100}}$$

$$19. -22.7, 22.7, 22.7$$

$$20. 100^{\frac{1}{2}}, -100^{\frac{1}{2}}, 100^{\frac{1}{2}}$$

$$21. -|-2.8|$$

$$-2.8$$

$$22. -|2+9|$$

$$-11$$

$$23. |-5| \cdot |6|$$

$$5 \cdot 6 = 30$$

$$24. -(|-2| + |-2|)$$

$$-(2+2)$$

$$-(4) = -4$$

$$25. |-2| - |2|$$

$$2 - 2 = 0$$

$$26. |2.5| \cdot |2.5|$$

$$2.5 \cdot 2.5 = 6.25$$

$$27. |2+8| - |2+3|$$

$$10 - 5 = 5$$

$$28. |2+3| \cdot |2+3|$$

$$5 \cdot 5 = 25$$

$$29. (2+6) - |6-2|$$

$$8 - 4 = 4$$

Re-teaching

2.3 Subtracting Real Numbers

$$1. 4 - (-6) \\ 4 + 6 = 10$$

$$2. -8 - (-2) \\ -8 + 2 = -6$$

$$3. -3 - 7 = -10$$

$$4. 0 - (-3) \\ 0 + 3 = 3$$

$$5. -1 - 1 = -2$$

$$6. -38 - (-14) \\ -38 + 14 = -24$$

$$7. 28 - (-15) \\ 28 + 15 = 43$$

$$8. 12 - (-28) \\ 12 + 28 = 40$$

$$9. 25 - (-23) \\ 25 + 23 = 48$$

$$10. -20 - (-18) \\ -20 + 18 = -2$$

$$11. -64 - 26 = -90$$

$$12. -1.6 - 4.5 = -6.1$$

$$13. -1.4 - 1.4 = -2.8$$

$$14. -2.8 - (-1.4) \\ -2.8 + 1.4 = -1.4$$

$$15. -3.9 - (-5.6) \\ -3.9 + 5.6 = 1.7$$

$$16. 7.8 - (-4.7) \\ 7.8 + 4.7 = 12.5$$

$$17. -3.6 - 12.2 = -15.8$$

$$18. |5 - 15| = |-10| = 10$$

$$19. |-8 - (-3)| \\ |-8 + 3| = |-5| = 5$$

$$20. |-4 - 11| = |-15| = 15$$

$$21. |-18 - (-38)| \\ |-18 + 38| = |20| = 20$$

$$22. |43 - (-12)| \\ |43 + 12| = |55| = 55$$

$$23. |24 - 36| = |-12| = 12$$

$$24. |-4.3 - (-6)| \\ |-4.3 + 6| = |1.7| = 1.7$$

$$25. |-8.5 - (-11.2)| \\ |-8.5 + 11.2| = 2.7$$

$$26. \left| \frac{1}{2} - (-2\frac{1}{4}) \right| \\ \left| \frac{1}{2} + 2\frac{1}{4} \right| = 2\frac{3}{4}$$

Reteaching

2.6 Adding and Subtracting Expressions

1. $(x+6)+(3x+3)$

$$\underline{x+6} + \underline{3x+3} = 4x+9$$

2. $(2m+4)+(5m-6)$

$$2m+4+5m-6$$

$$7m-2$$

3. $(12-7y)+(4y+10)$

$$12-7y+4y+10 = -3y+22$$

4. $(2a+6b)+(-6a-b)$

$$2a+6b+-6a-b = -4a+5b$$

5. $(-8x-13)+(2x-9)$

$$-8x-13+2x-9 = -6x-22$$

6. $(4n+5)+(3n+6m)$

$$4n+5+3n+6m = 7n+6m+5$$

7. $(7x-15)+(23-4x)$

$$7x-15+23-4x = 3x+8$$

8. $(3m+17)+(-m-19)$

$$3m+17+-m-19 = 2m-2$$

9. $(4p+6q-11r)+(-8p+6q-3r)$

$$4p+6q-11r+-8p+6q-3r = -4p+12q-14r$$

10. $(3x-3y)+(12x-2y)+(11x-y)$

$$3x-3y+12x-2y+11x-y$$

$$26x-6y$$

11. $4p-9p = -5p$

12. $8y-17-9y = -y-17$

13. $8x-(4+11x)$

$$8x-4-11x = -3x-4$$

14. $(m+3n)-(5m+7n)$

$$m+3n-5m-7n = -4m-4n$$

15. $(13x-9y)-(4x+10y)$

$$13x-9y-4x-10y = 9x-19y$$

16. $(2a+6b)-(14a-11b)$

$$2a+6b-14a+11b = -12a+17b$$

17. $-(3p-2n-t)$

$$-3p+2n+t$$

18. $(12x+3y)-(6x+2y-4)$

$$12x+3y-6x-2y+4$$

$$6x+y+4$$

$$19. (8a-6b-3) - (-2a+4b+7)$$

$$8a-6b-3+2a-4b-7$$

$$10a-10b-10$$

$$20. (8m+3n-4) - (3m-2n) - 8$$

$$8m+3n-4-3m+2n-8$$

$$5m+5n-12$$

Reteaching

2.7 multiplying and Dividing Expressions

$$1. (-2x)(11x)$$

$$-2 \cdot 11 \cdot x \cdot x = -22x^2$$

$$2. 5(4x^2) - 2(3x^2)$$

$$5 \cdot 4 \cdot x^2 - 2 \cdot 3 \cdot x^2$$

$$20x^2 - 6x^2 = 14x^2$$

$$3. -2(x^2 + x)$$

$$-2x^2 - 2x$$

$$4. 6(2x - 3x^2)$$

$$12x - 18x^2$$

$$5. x(x + 4)$$

$$x^2 + 4x$$

$$6. 3x(x - 8)$$

$$3x^2 - 24x$$

$$7. 5x(2x + 10)$$

$$10x^2 + 50x$$

$$8. -7x(5 - x)$$

$$-35x + 7x^2$$

$$9. 6x^2 - x(8x + 2)$$

$$6x^2 - 8x^2 - 2x$$

$$-2x^2 - 2x$$

$$10. -3x^2 - 4x(2 - x)$$

$$-3x^2 - 8x + 4x^2$$

$$x^2 - 8x$$

$$11. \frac{63a}{-9} = -7a$$

$$12. \frac{-450n}{10} = -45n$$

$$13. \frac{18x + 12}{-6}$$

$$\frac{18x}{-6} + \frac{12}{-6}$$

$$-3x - 2$$

$$14. \frac{8k-12}{-4}$$

$$\frac{8k}{-4} - \frac{12}{-4}$$

$$-2k+3$$

$$15. \frac{70x-30y}{-5}$$

$$\frac{70x}{-5} - \frac{30y}{-5}$$

$$-14x+6y$$

$$16. \frac{35x+210y}{7}$$

$$\frac{35x}{7} + \frac{210y}{7}$$

$$5x+30y$$

$$17. \frac{3(2x+4y)}{6}$$

$$\frac{6x+12y}{6}$$

$$\frac{6x}{6} + \frac{12y}{6} = x+2y$$

$$18. \frac{6(3x-8)}{2}$$

$$\frac{18x-48}{2}$$

$$\frac{18x}{2} - \frac{48}{2} = 9x-24$$

$$19. \frac{6(5+10x)}{10}$$

$$\frac{30+60x}{10}$$

$$\frac{30}{10} + \frac{60x}{10} = 3+6x$$

$$20. \frac{12(x-3y)}{4}$$

$$\frac{12x-36y}{4}$$

$$\frac{12x}{4} - \frac{36y}{4} = 3x-9y$$

$$21. \frac{3 \cdot 4(5y+8)}{2}$$

$$\frac{17y+27.2}{2} = \frac{17y}{2} + 13.6$$

$$22. \frac{7(-4a-6)}{1.4} = \frac{-28a-42}{1.4}$$

$$\frac{-28a}{1.4} - \frac{42}{1.4} = 20a-30$$

Reteaching

4.1 Using Proportional Reasoning

1. $\frac{10}{25} = \frac{2}{5}$

2. $\frac{30}{6} = \frac{5}{1} = 5$

3. $\frac{18}{16} = \frac{9}{8}$

4. $\frac{6}{4} = \frac{3}{2}$

5. $\frac{6}{17}$

6. $\frac{2}{15}$

7. $\frac{8}{10} = \frac{4}{5}$

8. $\frac{2}{5}$

9. $\frac{18}{1} = 18$

10. $\frac{2000}{10,000} = \frac{2}{10} = \frac{1}{5}$

11. $\frac{8}{244} = \frac{2}{61}$

12. $\frac{3}{500}$

13. $\frac{4}{5} \neq \frac{7}{8}$

$4 \cdot 8 = 5 \cdot 7$

$32 \neq 35$

False

14. $\frac{8}{12} \neq \frac{6}{9}$

$8 \cdot 9 = 12 \cdot 6$

$72 = 72$

True

15. $\frac{10}{6} \neq \frac{20}{12}$

$10 \cdot 12 = 6 \cdot 20$

$120 = 120$

True

16. $\frac{20}{100} \neq \frac{5}{20}$

$20 \cdot 20 = 100 \cdot 5$

$400 \neq 500$

False

17. $\frac{14}{16} \neq \frac{22}{24}$

$14 \cdot 24 = 16 \cdot 22$

$336 \neq 352$

False

18. $\frac{15}{18} \neq \frac{25}{36}$

$15 \cdot 36 = 18 \cdot 25$

$540 \neq 450$

False

19. $\frac{33}{22} = \frac{24}{16}$

$33 \cdot 16 = 22 \cdot 24$

$528 = 528$

True

$$20. \frac{45}{108} \times \frac{5}{12}$$

$$45 \cdot 12 = 108 \cdot 5$$

$$540 = 540$$

True

$$21. \frac{36}{100} \times \frac{27}{75}$$

$$36 \cdot 75 = 100 \cdot 27$$

$$2700 = 2700$$

True

$$22. \frac{6}{7} \times \frac{5.4}{6}$$

$$6b = 7 \cdot 5.4$$

$$6b = 37.8$$

$$b = 6.3$$

$$23. \frac{a}{5} \times \frac{2}{10}$$

$$10a = 5 \cdot 2$$

$$10a = 10$$

$$a = 1$$

$$24. \frac{18}{p} \times \frac{9}{25}$$

$$18 \cdot 25 = 9p$$

$$450 = 9p$$

$$50 = p$$

$$p = 50$$

$$25. \frac{5}{6} \times \frac{20}{r}$$

$$5r = 6 \cdot 20$$

$$5r = 120$$

$$r = 24$$

$$26. \frac{15}{8} \times \frac{k}{32}$$

$$15 \cdot 32 = 8k$$

$$480 = 8k$$

$$60 = k$$

$$k = 60$$

$$27. \frac{t}{2.4} \times \frac{7}{8}$$

$$8t = 2.4 \cdot 7$$

$$8t = 16.8$$

$$t = 2.1$$

$$28. \frac{d}{16} \times \frac{3}{4}$$

$$4d = 16 \cdot 3$$

$$4d = 48$$

$$d = 12$$

$$29. \frac{3}{1} \times \frac{m}{15}$$

$$3 \cdot 5 = m$$

$$15 = m$$

$$m = 15$$

$$30. \frac{2}{5} \times \frac{8}{30}$$

$$2 \cdot 30 = 8s$$

$$72 = 8s$$

$$9 = s$$

$$s = 9$$

$$31. \frac{8}{1.6} \times \frac{e}{2}$$

$$8 \cdot 2 = 1.6e$$

$$16 = 1.6e$$

$$10 = e$$

$$e = 10$$

$$32. \frac{180}{9} \times \frac{60}{n}$$

$$180n = 9 \cdot 60$$

$$180n = 540$$

$$n = 3$$

$$33. \frac{4}{90} \times \frac{12}{z}$$

$$4z = 90 \cdot 12$$

$$4z = 1080$$

$$z = 270$$

$$34. \frac{3}{4} \times \frac{x}{24}$$

$$3 \cdot 24 = 4x$$

$$72 = 4x$$

$$18 = x$$

$$x = 18$$

she will make

18 out of 24

free throws

Reteaching

8.1 Laws of Exponents: multiplying Monomials

$$1. 5^4 = 5 \cdot 5 \cdot 5 \cdot 5 = 625$$

$$2. 9^2 = 9 \cdot 9 = 81$$

$$3. 10^6 = 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 = 1,000,000$$

$$4. 2^7 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 128$$

$$5. 8^5 = 8 \cdot 8 \cdot 8 \cdot 8 \cdot 8 = 32768$$

$$6. 3^6 = 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 = 729$$

$$7. 6^1 = 6$$

$$8. 10^4 = 10 \cdot 10 \cdot 10 \cdot 10 = 10,000$$

$$9. 12^2 = 12 \cdot 12 = 144$$

$$10. 1^8 = 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 = 1$$

$$11. 3^5 \cdot 3^4 = 3^9 = 19,683$$

$$12. 2^5 \cdot 2^2 = 2^7 = 128$$

$$13. 10^5 \cdot 10^3 = 10^8 = 100,000,000$$

$$14. 5^6 \cdot 5^1 = 5^7 = 78,125$$

$$15. 8^4 \cdot 8^6 = 8^{10} = 1,073,741,824$$

$$16. 4^3 \cdot 4^4 = 4^7 = 16,384$$

$$\begin{aligned} 17. (5a^2)(3a^3) \\ &= (5 \cdot 3)(a^2 \cdot a^3) \\ &= 15a^5 \end{aligned}$$

$$\begin{aligned} 18. (-7cd^2)(3c^2) \\ &= (-7 \cdot 3)(c \cdot c^2)(d^2) \\ &= -21c^3d^2 \end{aligned}$$

$$\begin{aligned} 19. (-s^3t)(-5t^4) \\ &= (-1 \cdot -5)(s^3)(t \cdot t^4) \\ &= 5s^3t^5 \end{aligned}$$

$$\begin{aligned} 20. (6p^5)(4p^2q^3) \\ &= (6 \cdot 4)(p^5 \cdot p^2)(q^3) \\ &= 24p^7q^3 \end{aligned}$$

$$\begin{aligned} 21. (m^3n^2)(4m^2n^2) \\ &= (4)(m^3 \cdot m^2)(n^2 \cdot n^2) \\ &= 4m^5n^4 \end{aligned}$$

$$\begin{aligned} 22. (a^2b^3)(2b^2c^2)(3a^4) \\ &= (2 \cdot 3)(a^2 \cdot a^4)(b^3 \cdot b^2)(c^2) \\ &= 6a^6b^5c^2 \end{aligned}$$

Reteaching

8.2 Laws of Exponents: Powers and Products

1. $(2^3)^4 = 2^{12} = 4,096$
2. $(3^2)^3 = 3^6 = 729$
3. $(y^4)^3 = y^{12}$
4. $(m^5)^2 = m^{10}$
5. $(2s^3)^2 = 2^2 s^6 = 4s^6$
6. $5(r^5)^2 = 5r^{10}$
7. $(3c^6)^3 = 3^3 c^{18} = 27c^{18}$
8. $(n^3)^4 = n^{12}$
9. $(10^3)^2 = 10^6 = 1,000,000$
10. $(2y^3)^5 = 2^5 y^{15} = 32y^{15}$
11. $(6x^4)^3 = 6^3 x^{12} = 216x^{12}$
12. $(8q^3)^3 = 8^3 q^9 = 512q^9$
13. $(c^2d^2)^4 = c^8d^8$
14. $(9mn^5)^2 = 9^2 m^2 n^{10} = 81m^2n^{10}$
15. $4(e^4f)^3 = 4e^{12}f^3$
16. $(2p^5r^3)^4 = 2^4 p^{20} r^{12} = 16p^{20}r^{12}$
17. $(-3y^3)^2 = (-3)^2 y^6 = 9y^6$
18. $(-gh^4)^5 = (-1)^5 g^5 h^{20} = -g^5h^{20}$
19. $(ab^2)^3(-ab^3) = (a^3b^6)(-1)(ab^3) = -a^4b^9$
20. $(-2c^2d^3)^4(-3cd^2)^3 = (-2)^4 (c^8d^{12})(-3)^3 (c^3d^6) = (16 \cdot -27)(c^{11}d^{18})$
 $= -432c^{11}d^{18}$

* Subtract exponents of like bases *

Reteaching

8.3 Laws of Exponents: Dividing monomials

$$1. \frac{7^5}{7^2} = 7^3$$

$$9. \frac{x^2 y^5}{x y^3} = x y^2$$

$$2. \frac{2^9}{2^4} = 2^5$$

$$10. \frac{p^7 q^5 r^2}{p^3 q^4} = p^4 q r^2$$

$$3. \frac{8d^8}{2d^2} = 4d^6$$

$$11. \frac{-30g^9 h^8}{5g^3 h^6} = -6g^6 h^2$$

$$4. \frac{5m^4}{10m} = \frac{1m^3}{2}$$

$$12. \frac{24y^8 z^5}{-32y^6 z} = \frac{-3y^2 z^4}{4}$$

$$5. \frac{10^{15}}{10^6} = 10^9$$

$$13. \frac{-9s^{12} t^9}{-3s^8 t^6} = 3s^4 t^3$$

$$6. \frac{-36r^9}{4r^5} = -9r^4$$

$$14. \frac{8.4(b^2 c^3)^3}{2b^3 c^4}$$

$$7. \frac{-12c^{10}}{-2c^3} = 6c^7$$

$$\frac{4.2(b^2)^3(c^3)^3}{b^3 c^4}$$

$$8. \frac{9g^8}{-1g^1} = -9g^7$$

$$\frac{4.2b^6 c^9}{b^3 c^4} = 4.2b^3 c^5$$

$$15. \frac{2r^3}{n}$$

$$16. \left(\frac{35c^2m}{5} \right)^3$$

$$(-7c^2m)^3$$

$$(-7)^3(c^2)^3(m)^3$$

$$-343c^6m^3$$

$$17. \left(\frac{-20c^3}{(-2c)^2} \right)$$

$$\frac{-20c^3}{(-2)^2(c)^2} = \frac{-20c^3}{4c^2} = -5c$$

$$18. \left(\frac{d^9e^{12}}{(d^2e^3)^2} \right)^2$$

$$\left(\frac{d^9e^{12}}{(d^2)^2(e^3)^2} \right)^2$$

$$\left(\frac{d^9e^{12}}{d^4e^6} \right)^2$$

$$(d^5e^6)^2$$

$$(d^5)^2(e^6)^2 = d^{10}e^{12}$$

Reteaching

8.4 Negative and Zero Exponents

$$1. 4^0 = 1$$

$$2. 5^{-2} = \frac{1}{5^2} = \frac{1}{25}$$

$$3. 8^0 = 1$$

$$4. 4^{-1} = \frac{1}{4^1} = \frac{1}{4}$$

$$5. 3^{-3} = \frac{1}{3^3} = \frac{1}{27}$$

$$6. 1^{-2} = \frac{1}{1^2} = 1$$

$$7. 5^{-3} = \frac{1}{5^3} = \frac{1}{125}$$

$$8. 4^{-3} = \frac{1}{4^3} = \frac{1}{64}$$

$$9. a^3 \cdot a^{-5} = a^{-2} = \frac{1}{a^2}$$

$$10. c^2 \cdot c^{-7} = c^{-5} = 1/c^5$$

$$11. \frac{y^3}{y^6} = y^{-3} = 1/y^3$$

$$12. \frac{m^{-3}}{m^6} = m^{-9} = 1/m^9$$

$$13. p^8 \cdot p^0 = p^8 \cdot 1 = p^8$$

$$14. q^0 \cdot q^{-5} = 1 \cdot q^{-5} = 1/q^5$$

$$15. x^{-8} \cdot x^{-3} = x^{-11} = 1/x^{11}$$

$$16. z^{-5} \cdot z^8 = z^3$$

$$17. \frac{t^{-5}}{t^{-10}} = t^5$$

$$18. 5^{-3} \cdot 5^8 = 5^5 = 3125$$

$$19. x^5 \cdot x^{-3} \cdot x^{-7} = x^{-5} = 1/x^5$$

$$20. 3^3 \cdot 3^{-10} \cdot 3^6 = 3^{-1} = 1/3^1 = 1/3$$

$$21. \frac{t^{-5} \cdot t^5}{t^3} = \frac{t^0}{t^3} = \frac{1}{t^3}$$

$$22. \frac{4^7}{4^{-3}} = 4^{10} = 40,000$$

$$23. 5^3 \cdot 5^0 \cdot 5^{-1} = 5^2 = 25$$

$$24. a^2 \cdot a^{-3} = a^{-3} = 1/a^3$$

$$25. \frac{r^{10} \cdot r^{-2}}{r^5} = \frac{r^8}{r^5} = r^3$$

$$26. \frac{2^{10} \cdot 2^{-10}}{2^{10}} = \frac{2^0}{2^{10}} = \frac{1}{2^{10}} = \frac{1}{1024}$$